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A Park Association.

THIS is peculiarly an age of organization. In nearly every branch of science, of trade, of industry, and even of sport, we have national associations meeting in annual conventions. These associations have, for the most part, proved to be powerful instrumentalities for the promotion of their particular ends. They bring men together for the interchange of ideas upon subjects of mutual interest; they give to men living in widely separated parts of the country the advantage of personal contact with each other, and they provide the opportunity for agreement upon concerted lines of action to forward the ends they have at heart. There is one great popular interest, however, in which, as yet, no steps have been taken toward organization. That is, the important service of public parks. It is time that some action of the kind were taken. The public park movement now extends to nearly all parts of the country, and popular interest in the subject was never before so great. By organization this movement can be greatly assisted, and much can be done toward making the popular interest more active and intelligently effective.

Most of our leading American cities have now important park undertakings in hand, and many of the smaller ones have become alive to the value of public pleasure-grounds, and have taken practical steps to secure them. The formation of a public park association could hardly fail to make this movement still more widespread and to increase the popular interest in the subject. The publication of the proceedings of such an association, and their discussion in the press, would have a marked educational effect upon the people. The true purpose of parks would be more widely comprehended, and the danger of their abuse and maladministration would be correspondingly diminished. The meetings of the association each year, now in this city, now in that, would advance the park interests in the various localities. The several great cities of the country would each desire to be honored with a meeting of the association, and there would be a friendly rivalry among them in the matter of worthy preparation for the event. Each would desire to have its parks made most attractive for the occasion, special attention would be given to the subject, and the improved aspect of the pleasure-grounds of the city would be likely to be so marked that a subsequent falling off would be more difficult, and the result would be a permanent improvement. A spirit of emulation would also induce cities that had not yet given attention to the subject to undertake the establishment of public parks.

We would, therefore, suggest the formation of an American Public Park Association, to comprise the commissioners, trustees or committees in charge of the public parks and pleasure-grounds of the various cities and towns, also the authorities in charge of national and state parks or reservations, such as the Yellowstone and the Yosemite, the Niagara Falls, and the proposed Adirondack reservations in New York, and the proposed White Mountains reservation in New Hampshire. Organizations like the Massachusetts Trustees of Public Reservations, the proposed body in Massachusetts for the preservation of beautiful and historic places, should also be included, and an indispensable element in the membership would be the landscape-architects or gardeners engaged in park work, and also the superintendents of public parks and pleasure-grounds.

It would be well to make the Association continental, rather than national, in its scope, after the plan of the American Association for the Advancement of Science, the American Forestry Association and other important bodies. It would thus include not only Canada, but also Mexico, for in the latter country the institution of public pleasure-grounds, particularly in the shape of urban gardens, is a universal one, and much could be learned in that quarter. Appropriations from the various municipalities to defray the expenses of officials attending the meetings of the Association would be eminently proper, for the advantages gained from such conferences would return the expenditures manifold.

The meetings of the Association could not fail to be occasions of exceptional interest and enjoyment. They should be held annually in the various large cities of the country where public parks have been established, at some favorable time during the pleasant seasons of the year, ranging from late spring to early autumn. Perhaps, owing to the peculiar nature of the object, it might be well not to have the time for meeting fixed for any special week, or even month, since an examination of the parks of the place of meeting would be one of the features of the occasion, and therefore the time most favorable should be chosen. The time of year which would be most favorable for meeting in a Canadian city, for instance, might be extremely unfavorable in a southern city. It should also be the aim to hold the meetings successively in widely separated portions of the country, in order to make the influence of the Association as extensive as possible, as well as to give an agreeable contrast of environment to the various gatherings.

The subjects for discussion would have a wide range of character and would be practically inexhaustible. They would include questions of the maintenance, the management and the use of parks, and of their adaptability to various purposes. Landscape-gardening, with all its possibilities and limitations, would always furnish themes for discussion. Much information could be imparted and learned by means of lantern-slide exhibitions illustrating notable works completed or in progress. Visits to the parks of the city where the meetings might be held, besides excursions to places of scenic interest in the neighborhood, would all help to make these conventions events of educational value.

The power for good proceeding from such an association would be noteworthy in bringing about better methods of administration, in extending the influence of men who are recognized masters in the art of park design, and in elevating and popularizing the standards of good taste, and in checking meretricious and evil tendencies.

It might also be desirable to supplement the American Association with minor organizations of a sectional character, as in states like New York and Massachusetts, for instance, where public parks have of late years become numerous. In Massachusetts there are now at least nine cities and towns with boards of park commissioners. Besides the great park system of Boston, the parks of Lynn, Brookline, Worcester and Lowell are undertakings of notable importance. A state park association would therefore be capable of doing much good in the way of forwarding the right kind of legislation and in disseminating enlightened views on the subject.

Names for County Roads.

A SYSTEM of numbering country houses has been started in Contra Costa County, California, which, through the exertions of its originator, Mr. A. L. Bancroft, has attracted comment all over the country. Perhaps the most characteristic feature of this scheme is the so-called "ten-block system," according to which each mile along the various roads of the county is divided into ten equal parts or imaginary sections of 528 feet, and to each block is assigned an even number on one side of the road and an odd number on the other. Any house located within the block bears its number, and where a block contains more than one house these are distinguished by letters. Of course these numbers will indicate the distance from the starting-point, so that there is no trouble in calculating how far any given house or block is from any central point where the numbers begin, as, for example, from the county-seat, and, indeed, from any other point in the county by a given road. Numbers placed at the entrances of the various houses would in this way serve as mile-stones also, and the scheme taken all together contemplates the publication of a county directory on the same plan as that of the city directory.

The need of such an accurate location of one's dwelling place does not seem to be so great in the country as in the city, and perhaps it will be some time before the county directories will become general. But before the roads can be divided into blocks they must be named, and if any system of numbering is to be of benefit to strangers there must be guide-boards containing these names. This naming of the country roads, however, could be adopted in any county, even where the remainder of the organized plan was not adopted. The people of the particular county where this innovation has started have acted with remarkable good taste in the selection of names for their roads, and in an article which appeared in the *Pacific Rural Press* some months ago some admirable directions for naming roads were laid down. Here are some of them: A road should not be named after a residence or the name of a farm on it, since this would not be satisfactory to those whose names were not selected. A road should not be named after either of its termini; for while this might be appropriate in traveling in one direction it would be inappropriate in going in another. Names should be sought among the legends, the historical associations, the botanical characteristics and landscape features of the locality. If it is found difficult to select enough names of this sort good taste would suggest others hardly less appropriate.

In Contra Costa there is a foreign population of some size, and foreign names are used in some cases. The word road is not invariably adopted, but some other equivalent has been substituted. Some of the names selected are here given: The Contra Costa Highway is the road leading from the county-seat through the county; and as this is the only road which is called a highway it will be known as The Highway or the principal road of the county. Rio Vista or River View is the name of the road along the bluff that overhangs the river. Mountain Drive designates the road that leads to the summit of Mount Diablo, and Camino Diablo the one which winds around its base. Via Concordia is a road near the town of Concord. Willow Pass Road runs through the pass so named and extends both ways. Lime Ridge Crossing is the road which runs over this ridge, connecting two other roads, one on each side. Walnut Way is a road through a region where the native California Walnut-trees are numerous.

These examples show how admirably the work of naming has been done, and if tasteful guide-boards, painted with a light, though not white, background, and a dark border, and lettered with dark brown, are used, the general effect will be very pleasing. The name, however, is the essential point. Sections of the country where every farm and every feature of the land are known by some characteristic and distinctive title are invested with a peculiar interest. No one ever heard the name of the Hawk's-Nest Road, which runs along the brow of the cliff that overhangs the Delaware River above Port Jervis, without a desire to ride over it. And pleasant as is the prospect from Wolf-Pit Hill, looking down "The Clove," in Wantage township, New Jersey, it has an added charm from these names, which were given by the early Dutch settlers of the place.

Jeannette Park, New York.

THE city of New York is not well furnished with small parks, but one of the most interesting of these is illustrated on page 503 of this issue. Although it is in the oldest part of the city, and in a part devoted to the heavy business which naturally establishes itself along the docks, it is a very new park, the space which it occupies having been provided by the filling in of Coenties Slip, which, until a few years ago, extended inland from the river front through the entire depth of the square. Four years ago it was decided by the Park Department to plant the small area which was thus added to the territory of the city, and a plan was prepared by Mr. Samuel Parsons, Jr. As the park is not a thoroughfare, and there is no occasion to cross it in a direction parallel to the river, there are only two entrances, one on the side fronting the river and the other opposite to it. The view, which is taken from the roof of one of the houses facing the park, gives its design as clearly as if it were a map. The area of the park is about two-thirds of an acre, and the plan is simply an exterior border of shrubs, with occasional loose groups and masses of shrubs and herbaceous plants within the path, while at considerable distances apart are planted American Lindens, Elms, some Lombardy Poplars and occasional specimens of the Purple-leaved Plum.

In the older parks this view of the turf from above would not be possible, owing to the spreading tops of the trees. But here the trees have not yet reached a sufficient size to obstruct the sight or to be of any value for shade. It is worth while to note, however, that the only way in which it is practicable to obtain thrifty masses of shrubs among trees is to plant them together, so that they can adjust themselves to each other's company as they grow. After the trees are once established it is almost impossible to induce shrubs to grow in the shade of their branches. The shrubs used here are mainly Bush Honeysuckles, Thunberg's Barberry, Philadelphus, Japanese Snow Ball, Japan Quince, Coral Berry, Weigelia and Japanese Privet. This last plant, although it grows in rather a whippy form, can be kept in good shape by hard pruning, and it endures the trials of city life as well as almost any other. It is largely employed in this park. Besides these, there are some Golden Elders, which have been carefully pruned, and have this year been unusually rich in color.

This little bit of green is particularly cheerful in the closely built business part of the city. Its lines are all graceful; the selection of shrubs is good; the turf is in admirable condition, and as seen every day by the thousands who pass by it on the elevated railway, and get about the same view as the one in our illustration, with the busy river beyond and the Heights of Brooklyn in the misty distance, it is a pleasing and refreshing picture. It is a matter of complaint by the boys that they cannot play base-ball in Jeannette Park; but it is an unfailing delight to their smaller brothers and sisters, and in summer evenings it is

filled with people who live in the few flat-houses in the vicinity and in the upper stories of the warehouses and business buildings. It should be added perhaps that in the perspective the true shape of the park is hardly apparent. It is nearly twice as wide at the side next to the river as it is on the opposite side, and no two of its boundary lines are parallel.

A Japanese Floral Calendar.

IF a visitor to the City of Tokio should walk up along the Sumida River he would find upon the bank a noted garden which is known here by the name of Hanayashiki, which means in the Japanese language The Garden. To one who enters there to sip a cup of tea a little maid will present a printed list of flowers classified in the order of the months, and it will be found that the list is adapted to the Chinese calendar as most of our garden plants and our art of gardening were derived from China. The first month of the Chinese, which is the Japanese horticultural and floral January, begins about the middle of February in our modern calendar, and so on during the course of the year, and readers will understand that the first month on the list means February, and that the February of the horticultural calendar means actually March. Here are the seven chosen herbs of January: (1) Seri, *Œnanthe stolonifera;* (2) Nadzuna, *Capsella Bursa-Pastoris;* (3) Hakobe, *Stellaria media;* (4) Suzushiro, *Arabis flagellora;* (5) Hotokenoza, *Lamium amplexicaule;* (6) Suzuna; (7) Gogiyo.

These are the flowers of spring, the seven herbs being the earliest growth after the severe cold and deep frost of the winter. In the garden named above in the spring we can call for the soup of the season, which contains all these herbs. In a well ordered family the good housewife would prepare water with Nadzuna in it, and in this water the members of the family would dip the tips of their fingers before they pared their nails, which have been allowed to grow since December. This custom, however, is becoming obsolete.

After February, when the days become longer, the most popular flower is *Prunus Mume* (the Mume of the Japanese), which is generally cultivated throughout the empire both for its flowers and its fruit. The beauty and fragrance of its rich varieties are indeed worthy of admiration. It is often kept in a dwarf condition, and under this treatment is suitable for pot-culture on the porches or verandas. With it is found the indispensable and beautiful yellow *Adonis Amurensis* (the Fukujiso of the Japanese). The fruits of this tree make a very useful condiment, and its acid is extensively used for dyeing and other industries. The early Cherry, *Prunus subhirtella* (Higansakura), with its later varieties, blossoms in March, at which time the whole country is gay with merrymaking and excursions, and people of every class and age go out to enjoy the splendid display which Nature makes. Hundreds of people now repose on the smooth turf; and the soft sunshine and genial air are excelled in no other holidays of the year. In Japan the fruits of this Cherry are not cared for, but the flowers only.

On the eighty-eighth night after the 1st of January farmers rouse themselves from their winter confinement and leisure and begin to sow seeds in the fields and make beds in the gardens for their new plants. The Nashi (*Pyrus Ussuriensis*) is now in full blossom, followed by the famous Botan (*Pæonia Moutan*), which is well known in foreign lands, and in which we take a pride second only to that which we feel in the Chrysanthemum. Flower shows are held all over the country during this season. Less widely known than the former, and yet a general favorite here, is Shakuyaku (*Pæonia albiflora*), which has been favored by Nature with an air of gaiety beyond that of any of her floral companions. In one of our well known verses it is said:

> "Slender and shy like Shakuyaku when she stands;
> Beautiful and dignified like Botan when she sits;
> As stately and gentle as Yuri (Lily) in her bearing when she walks;
> These graces I hope for in *her*."

Sendan (*Melia Japonica*) and Unohana (*Deutzia Sieboldiana*) are not so attractive as the plants already mentioned, but the latter is used by good women in their celebration of Buddha's birthday on the 8th of April just as the Holly is among Christians.

At the end of May comes what we call the "Little Summer," really the approach to summer, when the Hanashobu (*Iris lævigata*) and Nemunohana (*Albizzia Julibrissin*) are in bloom. Then comes Asagao, which means, in the Japanese language, Morning Face, as you say in English, Morning Glory (*Ipomœa hederacea*), to which special attention is paid by the park gardeners of Tokio; and along the moat around the old castle of Tokio the morning walk is made beautiful by the blooms of Hasu (*Nelumbium speciosum*). *Scirpus maritimus* is another famous plant of the season, and in July, when the morning fogs leave dewdrops on the wayside grass, the *Lespedeza bicolor* in its varieties, some violet and others white, is abundant everywhere.

July and August are the most important floral months, and altogether the richest in the calendar in Japanese flowers. Here is a set of seven, which is usually offered on the festival of the Milky Way held on the 7th of July: (1) Senno, *Lycnis Senno*; (2) Hayakiku, Early Chrysanthemum; (3) Kikiyo, *Platycodon glandiflorum;* (4) Ominaeshi, *Patrinia scabiæfolia;* (5) Hasu, *Nelumbium speciosum;* (6) Oguruma, *Inula Britannica;* (7) Shimagaya, *Phalaris arundinacea*. Another collection for August is very useful and popular, in which we find two or three of the plants included in the last set: (1) Karukaya, *Anthisderia arguens;* (2) Kikiyo, *Platycodon glandiflorum;* (3) Ominaeshi, *Patrina scabiosæfolia;* (4) Hagi, *Lespedeza bicolor;* (5) Shiwon, *Aster Tartaricus;* (6), Fujibakama, *Eupatorium Chinese;* (7) Kudzu, *Pueraria Thunbergiana*. But there are often arbitrary amateurs who discard *Pueraria Thunbergiana*, and even *Aster Tartaricus*, for *Ipomœa hederacea*. The list we have made is the one popularly followed. The plants are generally grown together, not in regular rows, however, but in apparent confusion, so as to bring out their harmonies and diversities as in their wild state.

Two weeks ago I went for a trip to the north, and found some of these flowers growing in Nasuno, one hundred miles from Tokio, on the way from Nikko to Shiwobara, in their finest natural forms.

September is the month of the Chrysanthemum, and exhibitions of these are held in various places. One of the largest and finest is in His Imperial Majesty's detached garden at Aoyama, Tokio. But it is impossible to give any idea of the abundance and beauty of our national flower at this season.

In October comes the early frost, when the leaves begin to change their color and thus invest the mountains beyond the suburbs of the city with new beauty. The trees are chiefly Momidji (*Acer palmatum*) and its varieties, Urushi (*Rhus vernicifera*) and *Ginkgo biloba*, with which the Japanese floral year is concluded.

In the two months which follow *Pinus densiflora* (Akamatsu), *Thalictrum aquilegifolium* (Kamakurahiba) and similar evergreens rule in the gardens of the country whose people cannot do without them at any season. Indeed, this rich and fertile empire is ever green with foliage, and the happy mountains and valleys have a smile for visitors even in the middle of our hard December.

Of course, what I have written is not meant as a list of the plants available for garden purposes in Japan, but simply a catalogue of those which are kept in Hanayashiki for the purpose of indicating the respective seasons. Besides these, we have special exhibitions of Camellias, Wistarias and Azaleas at various places, of which I hope for an opportunity to describe later.

Agricultural College, Tokio, Japan. *H. Yoshida.*

Nematodes in the Chrysanthemum.

COMPLAINTS of sick Chrysanthemums have been so loud and general this autumn that a microscopic inspection of the trouble has been undertaken. The plants fail to make any adequate growth, the lower leaves turn brown and dry up, and soon the diseased plant is uprooted and replaced by another, which in its turn dies after the same fashion. With the hand lens no signs of insects were to be seen and no form of mildew or rust was found: But when the leaves in the first stages of the trouble were torn to pieces with a needle and forceps in water it was found that all the pulpy portion was infested with minute worms. They were found of various sizes and ages and in great numbers. Upon examining the dead portions of the plant the remains of these same worms were detected in all stages of decay.

The species is a Nematode which seems to be the same as that which was found on Violets last winter, and also at the present time, as some growers have recently reported. In the cultivated Violet the worms are practically confined to the roots, where they produce galls in considerable numbers, easily seen with the naked eye. *Heteroderma radicicola* is charged with preying upon a large list of cultivated as well as wild plants, but the works upon the subject do not mention the garden Chrysanthemum among the victims. If the Nematode in question is the same as that now well known upon the Violet it suggests that these two plants

should be kept at some distance from each other, or, at least, that earth once used for Violets should not be employed afterward for Chrysanthemums. Remedies for the Chrysanthemum Nematodes do not seem easy of application. A leaf, for example, that has lost its green color, and is passing through various shades of yellow to brown, may be alive with worms, but they are out of the reach of any external application, while lime or lime-water applied at the roots does not reach the place where they are most active.

Of course the leaves should all be removed and burned, and so should whole plants when too far gone to be worthy of more attention. If the dying leaves are left to fall and drift into hot-beds, cold-frames and other places they may do much to spread a serious trouble.

Rutgers College. *Byron D. Halsted.*

Plant Notes.

Some Recent Portraits.

THE *Gardeners' Chronicle* of September 20th contains a figure of a new Masdevallia, for which Mr. Rolfe proposes the name of *M. fulvescens*. It is a native of New Granada, whence it has been imported by F. Horsman & Co. It is related to *M. infracta*, but surpasses that species in the brighter coloring of the perianth, which is described as "of a light buff shade, passing into light purple-brown on the constricted sides of the throat, the upper sepal deeper orange-yellow, shading into purple-brown on the two lateral nerves."

A colored portrait of a flowering branch of one of the double-flowered forms of the Japanese Cherry, *Prunus Pseudo-Cerasus*, is the principal illustration in the issue of the *Garden* of London for September 20th. It well represents one of the most beautiful flowered of all small hardy trees. A number of forms occur in cultivation, one of the most attractive being that generally known as *P. Watereri*, in which the flowers are delicately shaded with pink. The single-flowered form of this tree is much less common in cultivation than the double-flowered garden-varieties, and is less vigorous as it appears in this country and not always perfectly hardy.

A recent portrait of *Staphylea Colchica* in the Bulletin of the Royal Tuscan Society of Horticulture reminds us of the great value of this shrub as an ornamental plant. It is by far the most beautiful of all the genus, and well worth a place in the shrubbery. Moreover, it forces well, and of late years it has been very largely used in both Paris and London for supplying the winter markets with fragrant white flowers.

New or Little Known Plants.

Gerbera Jamesoni.*

THE genus Gerbera is composed of about twenty species, most of them natives of South Africa. The one figured on page 501 appears to be the first introduced into gardens, having flowered for the first time in the spring of last year at Kew, when it was figured and described in the *Botanical Magazine*. In habit it is quite distinct, and its flowers are so large, so attractive in color and so lasting that it is certain to become popular with cultivators. Plants of it have flowered at Kew all through the present summer and are in flower still. They are grown in pots in a cool, sunny greenhouse, and are planted in a mixture of loam, peat and sand, and kept moderately moist. Last year a plant was tried in a sunny border out-of-doors, where it grew well and flowered all through the summer and autumn. During the winter it was protected by a slight covering of coal-ashes, but, in spite of this, the frost killed it. Except, therefore, in places more favored than the neighborhood of London, this plant is not likely to prove hardy. In pots, however, it is perfectly satisfactory. Hitherto no seeds have been matured by cultivated plants, the only means of multiplying them being by dividing the woody root-stock whenever a second growth appears. The plant is described by Sir Joseph Hooker as follows:

"All parts covered with soft hairs, and the mature leaves clothed beneath with a snow-white tomentum. Leaves numerous from the perennial root-stock, petiole six to eight inches, erect; blade five to ten inches long by two to three inches broad, runcinately pinnatifid, with the margins of the lobes undulate and cut into unequally sinuately toothed obtuse or acute lobules. Scapes ten to eighteen inches long, stout, naked. Head solitary, sub-erect, three to four inches broad across the rays. Involucre three-quarters of an inch long, campanulate, woolly, base intruded; bracts lanceolate, appressed. Flowers of the ray in one series, about thirty, narrowly ligulate, three-toothed, dull yellow beneath, bright orange or flame-colored above; . . . disc-flowers minute, of the same color as the ray-flowers."

To this it may be added that the leaves are evergreen, the flowers are rather nodding than otherwise, and they are open all day whether it be sunny or clouded. Each one lasts several weeks, and the color never loses its brightness and intensity.

This species was discovered in the Transvaal, near Barberton, now famous for its gold mines, and sent to Kew by the Curator of the Natal Botanic Gardens in 1888. Since then several other species of Gerbera have been procured from the same region, and these, judging from dried specimens, are likely to prove as valuable in horticulture as that here figured.

Kew. *W. Watson.*

*Bolus; Hook. f. *Bot. Mag.*, t. 7087.

New Orchids.

MASDEVALLIA GUTTULATA, Rolfe, is an interesting little *Masdevallia* which has been in cultivation for some considerable time. The native country is unknown. It has flowered in the Glasnevin Botanic Garden and also at Kew. It belongs to the Tovarensis group, having triquetrous peduncles, which bear two or three flowers in succession. They are about half the size of those of *M. Tovarensis*, yellowish white in color, spotted and slightly suffused with light purple. The name is given in allusion to the numerous small spots.—*Gardeners' Chronicle*, September 6th, p. 267.

CYPRIPEDIUM × ALFRED, N. E. Br., is a hybrid raised in the collection of Mr. D. O. Drewett, of Mill-on-Tyne, from *Cypripedium venustum* fertilized with the pollen of *C. Philippinense*. It is quite intermediate in character between its parents. The scape is single flowered at present. The sepals and petals approach *C. Philippinense* in shape, while the lip is more like that of *C. venustum*. It was awarded a first-class Certificate by the Royal Horticultural Society on August 26th last.—*Gardeners' Chronicle*, August 30th, p. 252; September 13th, p. 294.

CYPRIPEDIUM × ALICE, N. E. Br., was also raised in the same collection as the preceding, from *C. Stonei*, fertilized with the pollen of *C. Spicerianum*. It strongly resembles the last named species in shape, except the lip, which is more like that of *C. Stonei*. The scape bears two flowers, which are pale and delicately colored.—*Gardeners' Chronicle*, August 30th, p. 252; September 13th, p. 294.

CYPRIPEDIUM × CONSTANCE, N. E. Br., is another hybrid raised in the same collection as the two preceding, from *C. Stonei*, fertilized from the pollen of *C. Curtisii*. It is intermediate in character between the parents, with the lip approaching *C. Stonei* in shape. The sepals are milk-white tinged and nerved with purple, and the petals pale yellowish with numerous small purple-brown spots. The scape is two-flowered.—*Gardeners' Chronicle*, August 30th, p. 252; September 13th, p. 294.

Kew. *R. A. Rolfe.*

Foreign Correspondence.

London Letter.

DAHLIAS.—A great show and a special conference of Dahlias and Dahlia-growers were held at Chiswick last Tuesday. The flowers were as good, as numerous and as varied as might be expected in a country where the Dahlia has been more or less a popular garden-flower since the beginning of the present century. Mr. Shirley Hibberd opened the conference with a most interesting extempore discourse on the origin of the Florists' Dahlia. He startled the botanists by declaring that in his opinion there was no good ground for admitting more than one original species, namely, *D. variabilis*, the other five or six recognized by botanists being at most mere wild forms of that plant. Mr. Hibberd is probably right; but the same line of argument would, if followed, inevitably lead to the wholesale reduction in the number of species of tuberous Begonias, Rhododendrons, in fact of almost all genera which have discovered an extraordinary proneness to vary under cultivation. Although there is proof that the plants now known as Dahlias

Fig. 64.—Gerbera Jamesoni (reduced one-third).—See page 500.

were known to Hernandez in 1615 it was not until the year 1789 that the plant was introduced from Mexico, by means of seeds, to the Botanic Garden at Madrid. A few of these seeds were secured by Lord Bute and sent to England, where they flowered in 1790. The plants were, however, soon lost, owing to the mistaken idea that they required stove treatment. About this time this species received the name of *Dahlia coccinea*, the generic name being a compliment to the botanist, Andreas Dahl. According to Salisbury a second species, *D. variabilis*, was introduced in 1804 by Lady Holland, who sent the seeds from Madrid. Its behavior under cultivation is delightfully described by Salisbury in his paper read before the Horticultural Society in 1808 and printed in the first volume of the Transactions. The names he uses are: *D. sambucifolia* for *D. variabilis* and *D. bidentifolia* for what is now called *D. coccinea*.

The work of the florists began in 1813 in the Botanical Garden at Louvain, where a series of double-flowered forms were raised by Donkelaar. In England the Dahlia appears to have reached the height of its popularity about 1850, after which it began to decline until the founding of the Dahlia Society in 1870, which brought about a revival of the Dahlia amongst popular garden-flowers. In 1872 an additional interest and value were given to Dahlias by the introduction of *D. Juarezii*, the Cactus Dahlia. It was obtained by accident, so it is reported, from Mexico by a Dutch nurseryman, with whom it flowered in 1874. Two or three years afterward it was in the possession of the enterprising Mr. Cannell, who showed flowers of it at one of the horticultural meetings. It is probably of hybrid origin, or, at any rate, the production of the garden rather than of nature. There are now many varieties and crosses between it and the show Dahlias, but few of them, if any, surpass it either in brilliancy of color or in shape. *D. coccinea* has flowers three inches across, with a large yellow disk surrounded by a single row of scarlet, oblong ray-florets. *D. variabilis*, in some of its forms, is not unlike *D. coccinea*, but it shows considerable variety in the size and form of its flowers even in a wild state. Other species which have recently been used by breeders of Dahlias are *D. Merckii* (*D. glabrata*) and *D. gracilis*. The characters of these four are traceable in the single Dahlias of to-day.

It is recorded in the *Floricultural Cabinet* for 1858 that a figure of a distinctly double Dahlia occurs in an old work on the natural history of Mexico published at Rome in 1651. So far, however, as the double Dahlias of European gardens except *D. Juarezii* and its forms are concerned, they appear to have been first bred by Donkelaar, as above stated. The single Dahlia has only recently found favor in gardens. The sole object of the breeders of these plants in the old days was, no doubt, to get away from the single flowered varieties as far as possible. Within the last ten years or so all this has been changed, and now for every one who admires and grows the double flowered varieties there are twenty who prefer the single ones.

I have only recently noticed some of the most striking of the Dahlias grown in England at the present time. The following were awarded certificates by the Floral Committee:

Eldorado (Show), very full, deep crimson in color.

Othello (Pompon), a medium-sized flower, colored bright crimson.

Mikado (Pompon), a small flowered kind, white edged with crimson.

Comedian (Fancy), dull orange, striped and flaked with crimson and edged with purple.

Beauty of Arundel (Cactus), crimson with maroon edges, a good, bold flower of attractive colors.

Centennial, a large double flower, colored magenta, with deep crimson edges.

Melita (Pompon-Cactus), small flowers, with the florets pointed as in Juarezii, crimson tipped with white.

Yellow A. W. Tait (decorative), a bright, clear, yellow flower of special value as an effective border plant.

Daisy (Pompon), yellow, with deeper shade on tips of petals.

Grapes.—An exhibition of grapes was held at the same time with the Dahlias, and a conference of growers on the day following that given up to the Dahlia fanciers. There was a fair display of fruit, but, probably owing to the absence of a prize list, there were fewer exhibitors than might have been expected. The conference was remarkable for a paper on "The Enemies of the Vine," read by Mr. R. D. Blackmore, the eminent novelist, author of "Lorna Doone" and a market gardener besides. Mr. Blackmore deals with all the pests, insect and other, of the Vine except Phylloxera. This scourge is known to be present in more than one collection of Vines in England. So far the only really effectual remedy appears to be grafting as practiced in France, especially in Bordeaux. The stocks employed are the American Vines known as Jacquez and Herbemont and the variety *riparia* of *V. cordifolia*. Upon these the best French kinds are grafted, with, so far, perfect success—the stocks proving impervious to the attacks of the Phylloxera. A report upon this subject from Her Majesty's Consul at Bordeaux last year stated that "the regeneration of vineyards in which the European Vine had been extirpated by the Phylloxera has been effected, as was pointed out would probably be the case, by means of European Vines grafted on American stocks. Direct production from American stocks has, fortunately for the wine-consumer, been abandoned as hopeless." If the most terrible scourge that has ever attacked the Vine industry is overcome by means of grafting it ought to convince those people who declared against grafting of the absurdity of their sweeping assertion that "grafting is a delusion, a snare and a makeshift."

Papers on the subjects of "Soils and Manures for the Vine," and on "Packing Grapes," were read, the former by Mr. W. Thomson, of Cloverfords, whose work on the "Cultivation of the Vine" has done so much to make Grape-growing in England what it now is. These papers will be published in the Journal of the Society, and to any one interested in the subjects upon which they treat they may be cordially recommended as the latest utterances of the masters of the art of Grape production in England.

London. *W. Watson.*

Cultural Department.

An Alpine Border.

It is often difficult to find the right place in the garden for small hardy plants, odd bulbs, or pieces of things which require some special attention, or which it is desired to keep under observation. Such things planted in an ordinary border are apt to drag out a miserable existence even if they survive at all. They are usually overshadowed and starved out by their vigorous neighbors, or, if they happily secure a share of sunlight, insufficient drainage on the level is the cause of serious losses, for many of the smaller plants are especially impatient of water at the crowns. In ample grounds there is usually little difficulty in arranging a suitable rockery, where such plants may be made perfectly at home and most of the conditions for their successful culture provided. In narrower quarters, however, rockeries are seldom, if ever, satisfactory, for, while beauty must often give way to utility, it is well to avoid unsightly fixtures, and it is scarcely possible to arrange a rockery whose utility will be so great as to overbalance its incongruity in an ordinary small, flat garden. It occurred to me last spring while studying the problem of growing various alpines that a special border devoted to small things might be arranged which would prove satisfactory to a fair extent, and, at least, always interesting to the cultivator. Perhaps "An Attempt at an Alpine Border" would more correctly head these notes, for my planting as yet has been tentative. A long, narrow grass strip, which divided a hardy border from the main path, was turned under, and the ground was suitably prepared. On each side of this narrow border a row of stones was placed, raising it a few inches above the path and hardy border. Where any special soil is required it is supplied, and, when necessary, special elevations made or extra stones added to the soil. Plants of Arabis, Androsaces, Drabas, Aubrietias, Poppies (nudicaule), Myosotis, Anemones, etc., seem at present well established, while various labels mark where, in the spring, may be expected some of the charming visitors of the early year. It is not expected that in such a border one can grow all small alpines (neither can most of us manage many of them in a rockery), but this simple suggestion is, perhaps, of use to some small grower with a fancy for the dainties of the floral world, or who wishes a place that will give a hospitable welcome to odd small plants and bulbs. Such a border is inclined to dryness, no water remains long on the crowns, and, if it is not handsome, it is not obtrusive.

The loss of a turf border has caused no regret, it being always a source of care and expense and rather commonplace. Perhaps as the various creeping plants project over the edge of the walk they will agreeably break the straight line of an ugly path.

Elizabeth, N. J. *J. N. G.*

Rose Notes.

The proper method of staking Roses which are planted out for winter blooming makes an interesting subject of study at this time of the year, when the plants are, or at least should be, in such a condition as to require some support. And careless or clumsy staking detracts greatly from the appearance of a Rose-house, besides being quite unnecessary; for neat stakes are readily procurable and at very moderate outlay. The shallow benches, so much favored for Rose-growing, do not contain a sufficient depth of soil to support the long stakes that are needed, and therefore many growers have adopted the plan of running a stout wire in line with the row of plants from one end of the bench to the other, the wire being three to three and a half feet above the soil, and the tops of the stakes are fastened to this wire. By means of this device quite slender stakes may be used—for instance, a square stake of cedar or poplar or chestnut half an inch in diameter will answer the purpose very well when supported at the top as described.

This makes quite a neat arrangement; but a less conspicuous one for the same purpose is composed entirely of wires, by using parallel upper and lower wires and replacing the stakes with upright wires fastened to each of the horizontal ones. The latter method offers the least possible obstruction to the light and also to the force of water when syringing, and provides a strong and durable trellis.

Another method of supporting Roses was recently suggested by a practical grower—namely, to stretch strips of wire netting above the bench and supported by a vertical wire at each side of the bench. The shoots of the Roses are to be tied to the netting, and it is expected that the plants will thus be spread out more, and, in consequence, receive more light and air than when tied in the usual manner. The netting alluded to was that made from galvanized wire, and of large mesh.

The often repeated injunction that Roses require plenty of fresh air should be well observed at this time of the year, so that all the growth the plants make is firm and solid, and, therefore, fit to withstand the strain of continued winter flowering. At the same time strong draughts should at all times be avoided, as mildew is sure to follow. A little artificial heat is generally found necessary at night in this latitude by the 1st of October, but this must be regulated by the weather, and some seasons it may be needed before this time; but the firing should be regulated carefully, for too much heat will do quite as much harm as too little. At this season of the year the advantages of steam heating for certain purposes become apparent, as the temperature may be more easily regulated under this system than with hot water, and this is nowhere more noticeable than in the Rose-houses.

Black mildew, or "black spot," as it is generally known, is now appearing on those varieties for which it shows a special preference, and may be increased rapidly by one over-watering, and this makes it essential that the watering should be done with caution at all times. A reliable remedy for this much-dreaded Fungus would be a great boon to Rose-growers, but thus far a real specific has not been discovered, though many have been tried. The most effective treatment seems to be the picking off of the affected leaves and the removal of all decayed leaves from the surface of the soil. This does not cure infected plants, but it helps to check the spread of the Fungus to a certain extent.

In the matter of varieties there seems to be but little change among commercial growers this season, most of the sorts favored last year remaining standard for this winter's trade. Among the newer varieties, Duchess of Albany and Madame Hoste are far in the lead in popularity, and both of these excellent sorts have been largely planted. Pierre Guillot finds favor with some large growers, though this Rose does not seem to grow freely in all soils. The flowers keep well after being cut, however, and when well grown have a fine color.

The general verdict seems to be that W. F. Bennett, though a beautiful flower when in good condition, does not pay the grower because it shows too many short-stemmed flowers, which do not sell well, and though there are many small lots of this variety to be seen, yet a hundred-foot bench of it is now a comparative rarity. Souvenir of Wootton does not seem to have superseded American Beauty, as was hoped at the time of its introduction, but still it is reported in some

instances to have proved a profitable variety last winter, and it will probably continue to be prized—at least for the local trade.

Holmesburg, Pa. *W. H. Taplin.*

Notes on Shrubs.

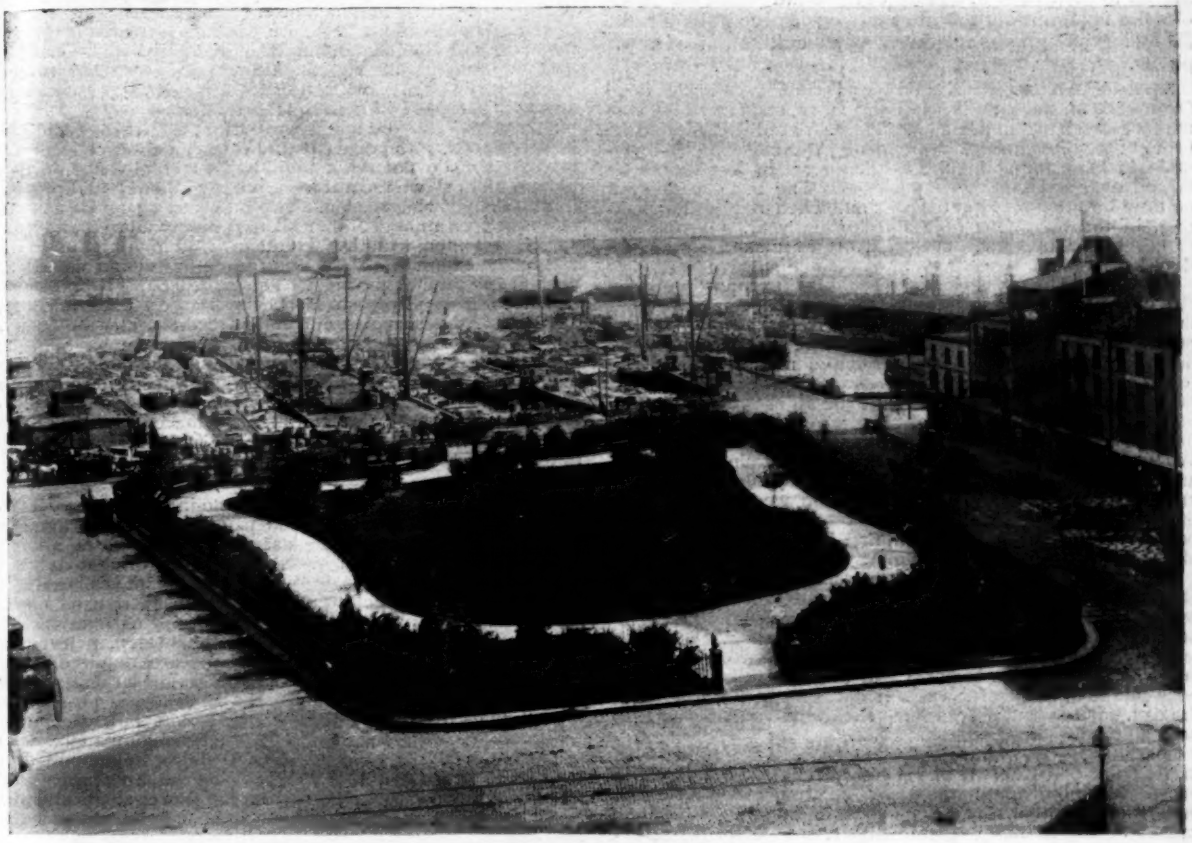
Stephanandra flexuosa, first introduced by Veitch & Sons from Japan, has matured a little fruit at the Arboretum this season, the seed ripening in the latter part of September. Comparatively few of the numerous small blossoms which the plant bears develop into fruit, and a large proportion of this is without good seed. However, seed may be produced more freely as the plants become older. The fruit resembles that of the closely related Nine-Bark (*Physocarpus opulifolius*), except that it is a very great deal smaller. Usually only one, or rarely two, seeds are borne in a pod.

The little white flowers which this plant produces in June are not individually showy, but in the middle of the month, when they are most abundant, they present a delicate, graceful appearance, mingled with the fine foliage. It is for the sake of the foliage quite as much as for the flowers that this Stephanandra is of interest and value for ornamental purposes. The deeply cut and serrated, triangular, pointed leaves are about an inch in length; they are of a dark green color, and are sufficiently abundant to effectually cover the branches and stems. This is a fast-growing shrub, and while it has a somewhat close and bushy habit, it maintains a light and graceful appearance not possessed by many hardy, woody plants.

Although it has not been sufficiently well tested to warrant the statement that it is hardy, it at least promises to be an interesting and valuable addition to the list of plants which will do well in sheltered situations in this latitude.

While the fruits of nearly all the species of Spindle-trees (Euonymus) are more or less showy when they reach maturity, there are few which, for beautiful and showy qualities, produce fruit equaling that of the Broad-Leaved Spindle-tree (*Euonymus latifolia*) in its best condition. The fruit is perfected comparatively early in the season, being fully ripe early in September, and it remains on the plants and keeps its brightness for a month or more. The pods are unusually large, and are produced in flattish clusters of from six to ten or more, suspended on slender stalks two or three inches in length. They are of a deep pinkish red color, and with the bright scarlet arils, which they disclose upon opening, they make a very handsome appearance; and as the long peduncles allow the clusters to hang much below the branches and foliage they make an effective and little obscured display of color.

E. latifolia is rarely seen in cultivation here, and when found in gardens usually presents a poor appearance by being stunted and crowded by other trees and shrubs. Under favorable circumstances it may attain a height of from ten to twenty feet. The leaves are large and broad, smooth and almost shining. The branches are smooth, the young shoots being reddish green in winter; and in the long, tapering, pointed, green buds we have a character which assists us in determining this species from all others when they are destitute of flowers, fruit or foliage. In common with nearly all plants, the various species of Euonymus show great differences in the times of maturing of fruits, and even in different plants of the same species there is sometimes as great a variation as a month in the opening of the pods. The common European Spindle-tree (*E. Europæa*) sometimes shows this in a very marked degree; and so does the Japanese Winged Euonymus (*E. alata*), so called because of the thin, corky excrescences on the branches, which give them a four-angled appearance. These thin excrescences or plates are produced at right angles to each other in the lines of the buds and branchlets which break their continuity at regular intervals. In some plants the corky excrescences are not very prominent, in others they are often a sixth of an inch long. The fruit of this species is small and mostly contains only one developed ovule, and as the stalks are short the pods appear almost sessile on the branches. On different plants the period of ripening or opening of the pods extends from about the 10th of September until near the end of the month or later. Although the arils of this species are of as bright a scarlet color as any in



Jeannette Park, New York.—See page 498.

the genus, they are not nearly so showy because they are small and much hidden by the leaves. The foliage of *E. alata* assumes rich purple, rosy red or scarlet colors in the autumn, constituting its chief merit and value in ornamental planting. A less valuable plant is the Warty-barked Euonymus (*E. verrucosa*) of central Europe. It is a species of close, upright habit, and with light green leaves. But neither foliage, flowers nor fruit are particularly striking; the chief interest and peculiarity being in the little wart-like excrescences by which the bark is thickly covered.

Arnold Arboretum. *J. G. J.*

Growing Hippeastrums.

ONE of the most interesting papers in the latest volume of the Journal of the Royal Horticultural Society is on the Hippeastrum, or, as it is more generally known in gardens, the Amaryllis, by Mr. Harry Veitch. The story of the development of these flowers by selection and crossing up to their present beauty of form and varied brilliancy of color is admirably told, but we have space only for the following paragraphs relating to the cultivation of these plants.

Soil.—The compost should consist of two-thirds good fibrous loam, such as is used for vines, and one-third cow manure fresh from the stall. These ingredients should be brought together toward the end of July, and allowed to remain in heap for about three months, when they should be turned over and well mixed together. The mixture must at no time be allowed to get too wet, and when required for potting, in the early part of the following year, a proportion to the whole of nearly one-third of silver sand should be added.

Potting.—The pots selected should be in proportion to the size of the bulbs, and the smaller the pots that can be so used the better; in every case the drainage must be ample. Before potting, every vestige of old soil should be shaken off, and any decaying roots, and any other decayed matter that may be found about the bulbs, should be removed. The potting should be performed according to the time the bulbs are required to be in bloom, a period of eight to ten weeks being the usual interval between the potting and the flowering of the bulbs. We usually commence potting about the middle of January, and have bulbs in flower about the middle of March, the flowering season continuing for eight to ten weeks. After potting, the pots should be plunged in some suitable material; no bottom heat should be applied at first, but the bulbs should be allowed to start into growth as gently as possible.

Temperature.—After potting, the temperature of the house should be maintained at fifty-five degrees for three or four weeks, then a little bottom heat should be given, and the temperature of the house raised to sixty degrees F. With this temperature the house should be damped down occasionally, and when the weather is warm and bright a little air should be admitted at the top for a couple of hours in the middle of the day. When in flower, a light shading should be used to prolong the flowering season.

Watering.—This requires the most careful attention; it is, in fact, the pivot on which successful Hippeastrum culture turns. More bulbs are injured or die from excess of water than from any other cause, and excess of water is one of the causes of the so-called Eucharis mite, one of the most destructive pests the cultivator of the Hippeastrum has to contend with. At the time of potting, the new soil should be a little moist; after potting, no water should be given for four or five weeks, or till the foliage and flower-scapes have attained a height of two or three inches; then it should be sparingly applied until the flower-buds appear, but from that time a more liberal supply should be given till the foliage is perfected; it should be then gradually reduced until about the middle of August, when it should be withheld altogether. Eight or nine weeks later the pots may be lifted out of the plunging material, and after an interval of another month all the plunging material should be removed from the house and the bulbs kept perfectly dormant on the stage till the potting season comes round again; the house, too, should be kept as dry as possible the whole time the bulbs are at rest. We use no liquid or artificial manure at any time. Much has been written in the horticultural press about the mite that appears both on the Eucharis and on the Hippeastrum, but we have no fear of it. In my opinion its prevention is simply a matter of not over-potting and not over-watering, and we have seldom seen bulbs, however badly affected, that could not be brought into perfect health again.

Treatment after Flowering.—After flowering the pots should be kept plunged, and each pot and about half the exposed part of the bulb should be covered with the plunging material. When the roots begin to push, more bottom heat and more water should be given; the atmosphere of the house should be kept more humid, and the foliage occasionally syringed. In bright, warm weather a slight shading should be used, and the growth of the plants encouraged to proceed as rapidly as possible; for the stronger the bulbs the finer will be the flower-scapes and their flowers in the following spring. Toward the end of July the bulbs should be gradually ripened by diminishing the shading, and three or four weeks later the shading may be discontinued altogether and as much light and air admitted into the house as possible.

Insects.—There will be no difficulty with these pests if their first appearance is watched for, and their increase checked as soon as they are discovered. Thrips will spot the foliage, but fumigating occasionally will keep them under. During the summer months red spider will also attack the foliage, but their increase can be prevented by syringing and by keeping a moist atmosphere in the house. Sometimes mealy-bug appears, especially if the bulbs are placed near plants subject to the attacks of that plague; but it can be easily kept in check by cleaning or syringing with blight composition once or twice a week, and in winter, when the foliage has fallen, it can be seen and removed without much trouble.

Some cultivators of the Hippeastrum, as Mr. R. S. Holford, of Westonbirt, who possesses the finest amateur collection in this country, do not repot their bulbs annually, nor do they plunge them as we recommend, but give them liquid manure during the growing season. The bulbs are also grown in different houses amongst other plants, and in vineries, and most successfully, too, with the advantage of prolonging the season to such an extent that a Hippeastrum in flower can usually be seen at any time of the year. The value of the Hippeastrum as a decorative plant can thence be scarcely underrated, for even when the scape is cut and placed in water the flowers continue fresh nearly as long as if left on the bulb. Some of the Dutch growers treat the Hippeastrum much in the manner we do, notably Mr. De Graaf, of Leyden, whose collection is a magnificent one, and to whom we are indebted for very valuable information when we commenced the cultivation of this beautiful plant, and with whom we are now in friendly rivalry in the raising of improved forms.

Achillea serrata, fl. pl.—My former note in Garden and Forest (p. 408) on the merits of this plant has called forth many inquiries, and I notice in the last number Mr. E. S. Miller's method of increasing it. A strong clump of this Achillea will produce quite fifty stolons, and if the plant is placed in a cellar until January each of these stolons will, if used entire when potted up, make vigorous plants with as many as six leading growths, and I consider this the best plan to adopt where a limited number of good plants are required. For trade purposes, where it is desirable to get the largest number from a given quantity of roots, it certainly is possible to take cuttings from every joint of the stolon, but, except for trade requirements, the plants will not bear comparison with those obtained from the use of the entire stolon potted in January or February. Achilleas may also be easily propagated from the young shoots produced on the flower-stems after the flowers are past, and if wintered in pots make good plants the next year.

Anemone Japonica.—The pot-culture of this Anemone, as advocated by T. D. H., is certainly a good way to treat this most delicately beautiful of autumn flowers. It was my privilege to see the plants spoken of, and better examples of good cultivation could not be desired. When I saw them they were already in flower, while ours in the same district, but planted out, were fully two weeks later. This season's frost did not visit us until the last week in September, and the Anemones have had ample time to flower and make a nice display, but when they can be had two weeks in advance by pot-culture this alone in some seasons would warrant the adoption of this method. Pot-plants of Anemone grown in this way are most serviceable for house-decoration, and help to fill the gap which always occurs between the loss of outdoor flowers and the advent of the Chrysanthemum season. If all roots of Anemones that are as thick as a Wheat straw are lifted in fall and placed in the cutting-bench they will at once begin to grow and may be potted in three-inch pots, and if these are grown on into ten-inch pots, and plunged out-of-doors in May, fine flowering specimens will be produced in September. In more favored sections the same pot-raised plants may be planted out-doors, there to remain, but in

the northern states this Japan Anemone is not reliably hardy, and it is always best to lift the roots and store them in a cool cellar until spring.

South Lancaster, Mass. *E. O. Orpet.*

Vallota purpurea.—The Scarborough Lily (a name under which this plant was more generally known in England some years ago than it is at present) is one of those plants a well-grown specimen of which at once commands attention. The genus, named after the French botanist, Pierre Valot, has this representative alone, and it belongs to the *Amaryllidaceæ*. The Vallota was introduced from the Cape of Good Hope in 1774. The bulb is large and firm; leaves strap-shaped and evergreen; scape slightly longer than the leaves, bearing from five to ten, and sometimes even more, bright scarlet, funnel-shaped flowers in the form of an umbel. The plant succeeds best in the greenhouse, and it is an excellent subject for cultivation in the dwelling-house. It is rather a common plant in gardens, but from the weakly specimens generally seen it is evident that its cultivation is far from being perfectly understood. The soil best suited to its requirements is a mixture of good loam, fibrous peat, thoroughly decomposed farm-yard manure and sand in equal parts. When potting is necessary, it is best done soon after the flowering season. Care should be taken that the bulbs are disturbed as little as possible, and their crowns should be on a level with the surface of the soil. Frequent or annual potting is injurious, and should only be undertaken when a shift or renewal of soil is absolutely necessary. In the meantime give plenty of water and stimulating liquids during the season of growth. It is a mistake to dry off the plant periodically, for it needs no season of perfect rest like most other bulbous plants. In its natural state it is found in marshy districts, and it practically knows no dry season. Of course less water will supply its needs in winter, but at no time should the soil be allowed to get dust dry. The pots may be set out-doors during the summer months with advantage. In such cases a bright, sunny position should be chosen, with an ample supply of water, and the roots protected from the burning sun by shading the pots. The flowering season lasts through August and September, but if the plants are strong and healthy this season may be hastened or delayed by several weeks. The stock may be readily increased from the offsets which are freely produced by vigorous plants. There are several varieties of *Vallota purpurea*. Some of these have larger flowers than the type, in others the flowers are a trifle brighter.

Botanic Gardens, Cambridge, Mass. *M. Barker.*

Spraying against Pear Blight.—The orchard of Mr. J. M. White, of Middlesex, New Jersey, contains some 1,200 trees, and early in the season the spraying was begun with a Nixon cart-pump, throwing two strong streams. With this cart and three men, with a boy to lead the horse, the entire orchard was sprayed thoroughly in four hours. The first spraying was with a mixture of London Purple for insects, and carbonate of copper with ammonia for the Blight Fungus. One Clairgeau tree was left unsprayed, and from this the leaves fell very early and the few pears produced soon followed. They were small, blotched and cracked so much as to be about worthless. The surrounding trees of the same variety retained their foliage well, and, as this was an off-year, prices were high and profits great. Mr. White saved several hundred dollars on his Clairgeau pears alone. The Duchess and other varieties were also benefited, as may be inferred from the fact that their owner secured an unbroken list of first premiums at the State Fair. This case is simply cited to show that the time has come when spraying machines of some kind must be adopted as regular implements on the farm. It should be understood that they can be used for the potato-field as well as the orchard and vineyard.

New Brunswick, N. J. *B. D. H.*

The Forest.

The Forestry Exhibit at the Columbian Exposition.

We find in the *Southern Lumberman* a paper read by Mr. Henry L. Tolman at the meeting of the Lumber and Forestry Committee of the National Commission in charge of the coming World's Fair at Chicago. The extracts given below will furnish a good idea of the character and scope of such an exhibit as the enlightened lumbermen of the country think the forest-interests of the country deserve:

The lumber business ranks third in commercial importance among our domestic industries, and for several reasons is entitled to a prominent department in the Columbian Exposition. The products of our forests are so varied, the forms into which they are manufactured so numerous, and the multitude of wood-working machines so great, as of themselves, when properly classified and arranged, to make a large and attractive display, not only to those directly interested, but to the world at large.

Again there is a scientific department to which attention has never been called, but which, if properly developed, would be of rare and novel interest. A study of the cell structure of trees in health and disease furnishes the only means for answering many of the practical questions—as to why wood decays, the relative value of sap and heart wood, butt or top logs, the comparative worth of Wisconsin, Kentucky or Louisiana white oak, white or yellow pine, white and red cypress, the comparative value of cedar, poplar, cypress, redwood, fir and other woods. Physical tests for transverse strain and compression made by elaborate and costly machines are constantly necessary to determine similar questions as to breaking weight, and their results can be instructively and effectively shown. A vast belt of Short-leaf Yellow Pine extending from Maryland south, skirting the Blue Ridge Mountains their entire length, and fringing the northern edge of the great Long-leaf Pine belt as far as central Texas, is rapidly coming into market, but the prejudice against it has been so great that until the last two or three years it has been compelled to masquerade under another name to find purchasers. Its inferiority has been greatly exaggerated, and science only can best determine its value as compared with that of its better known rival, the so-called Georgia Pine. The Government has recently begun measures to recover damages from turpentine distillers who have been boxing trees on unsold lands without license, on the ground that such boxing injures their growth and deteriorates them in value, and science will be called on to answer this question.

Extensive forests of Sweet Gum fill the swamps of Georgia, Alabama, Mississippi and Louisiana, which are comparatively valueless, because no successful way has been found of drying the lumber without serious surface checking, and science must solve the difficulty. Scientific facts are disseminated very slowly among the people by the ordinary channels, and the occasion we propose to celebrate offers an opportunity unequaled in the history of our country.

Having thus very briefly outlined a few of the many ways in which the solution of these scientific questions can be of real practical advantage, permit me to suggest how such an exhibit should be made.

First, there should be specimens of all the four hundred and twenty-five species of trees with which nature has beautified this, the forest continent of the world. These specimens should be cut at least three feet long, flat and rift sawed, so as to show grain and pattern, and giving bark, sap and heart wood. All boards should be dressed, and some of them polished in different ways to show the best manner of treating them. Transverse sections of the butt and top cuts should also be obtained, at least of the commercially valuable woods, to show the annual growth of rings, thickness of sap and bark, etc. If possible, specimens of leaves, flowers and fruit should likewise be obtained, not only for the aid of professed botanists, but to enable lumbermen to identify species, as it is a well known fact that common names of trees vary greatly according to the locality. In the Oaks, especially, the confusion of names is very annoying, and the quality of the different species varies greatly. Another interesting feature would be photographs enlarged under the microscope of specimens of woods, which would show far better than any ordinary examination the causes of the difference between different species. Numerous and exhaustive physical tests, such as were made of the various woods under the direction of the Census Bureau in 1880, should be shown, the results of which afforded valuable evidence as to the relative resistance of the various woods to strains and compressions, and their adaptability for bridge building, railroad ties or sills, and the like, or, on the other hand, for furniture or interior decoration. No wood unites in itself all the desirable qualities, and as gradually one after another of the most valuable kinds of wood become exhausted, at least in merchantable quantities, greater attention must be paid to the selection of satisfactory substitutes.

Besides specimens of native forest-grown trees, there should also be others of trees artificially planted in various sections. Some of them are large enough to give valuable data as to the comparative growth and quality of naturally-grown and planted-out trees. The same work might profitably be pushed still further, and important data thus be obtained toward

settling the vexed question as to whether our native forests can be replaced by artificial planting. The booths or rooms in which such exhibit is made should be constructed of native wood entirely, arranged so as to make practical application of the scientific facts above mentioned, and this feature would offer an indefinite field for expansion, where rival states as well as lumbermen could display their products.

Closely connected with this scientific portion, so as to show it to be a part of one symmetrical whole, should come the wood-working machinery of every kind, beginning with some specimen of the primitive sash or pit saw, through the wide range of circular and band saws, then gang saws, edgers and trimmers, shingle and lathe machines. Practical examples of the operation of this machinery should by all means be given, either on certain days or at certain hours. After these machines designed for reducing the raw material to manufactured form would naturally follow the more intricate planing machines, tenon and mortise machines, surfacers, moulding, barrel, matching, veneer, pail, nailing, sand-papering and turning machines, and the wonderful and novel carving machines, where the numerous manufacturers would properly have all the needed space to show the advantages of their rival inventions.

Lastly, it would be eminently proper, though perhaps not practical to the full extent, to have connected with the lumber and forestry exhibit a display of all kinds of articles made of wood, carved specimens, wood pulp, and the numerous articles made from it, such as pails, dishes, pressed ornaments, etc.

Too much stress cannot be laid on the necessity of system in such a varied and extended exhibit. Though logically the parts are all intimately connected, yet a careless, immethodical display, difficult to comprehend, would leave the ordinary visitor with no definite notion of any part, while one strictly subordinated to an orderly progression would give a clear, though perhaps from the nature of the case often a superficial view, but one which could easily be remembered and of permanent benefit.

Of equal importance is the question of some government supervision of at least the scientific part of the exhibit, if it can be done within the limits of the act. Lumbermen and machinery makers, practically interested, can be trusted to make a fitting display in the direction in which they are acquainted. They represent a broad minded class of men, already greatly interested in the widest success of a lumber exhibit, who can be relied on to join heartily in the exhibit, if only a proper initial movement is made. Hence the necessity of a generalship declared by a higher authority, not only impartial, but more catholic.

The best interests of the lumber industry, as well as of the Exposition, will be subserved by an exhibit covering as near as possible all branches of this department and allowing no one to usurp undue importance.

Correspondence.

Improper Pruning.

To the Editor of Garden and Forest:

Sir.—Will you give us your views on the removal of the lower branches from ornamental trees? Many people here insist that all lower branches must be trimmed away in order that the ground may be thoroughly cultivated up to the very trunks of the trees. Clumps of conifers, Grevilleas, Acacias and other trees are spoiled in this way and have about as much beauty as an ostrich. I leave you to imagine what an *Araucaria excelsa* looks like treated in this way.

Santa Barbara, Cal. *F. D. O.*

[It should be the aim of cultivators of ornamental trees to preserve as far as possible all their lower branches. The highest type of beauty in a lawn or park tree is that in which the lower branches repose on the ground, and which present a solid mass of foliage from top to bottom. It is not easy always to produce trees of this description, and it can only be accomplished by allowing them abundant room and air on all sides for free growth and development. Even with sufficient space about them, certain trees, like some of the Pines and the Sugar Maple, lose their lower branches early and develop tall naked trunks. Lower branches are essential to the beauty of all coniferous trees which grow naturally with a pyramidal habit, like the Firs, Spruces and Araucarias. Nothing is more ugly than one of these trees deprived of its lower branches growing by itself as a specimen.

Lower branches perform a valuable service to the tree, especially such trees as grow in very moist climates or in situations where they are exposed to high wind. Young trees, like Firs and Spruces, which grow generally on high mountains where the rainfall and wind are excessive, are provided invariably with long lower branches, which have two purposes: first, to check evaporation from the ground immediately about the stems of the trees, and then by keeping the principal weight of the branches near the base of the tree to enable it to withstand severe lateral pressure from wind. Such trees as they grow naturally in the forest become crowded, and the lower branches being deprived of light, cease growing and gradually die and fall off, being no longer needed for the welfare of the tree, which is protected by its neighbors from evaporation from the surface of the soil and from the sweep of the wind.

A specimen tree growing by itself with all its lower branches preserved is in very much the same condition, so far as protection is concerned, as the same tree growing in the midst of a dense forest and entirely destitute of branches for a height perhaps of fifty or sixty feet. That this is true appears from the fact that if all its neighbors are cut away from about a tree which has grown in a dense forest, it will soon perish from exposure to the sun, or will succumb to the first severe gale. It is more important to check evaporation from the surface immediately about the trunk of a tree than it is to cultivate the ground. Trees feed only through the ends of their roots, which extend laterally as far or further from the trunk than the branches. The place to cultivate a tree is outside the spread of the branches, and not beneath them. The removal, therefore, of the lower branches of ornamental trees, especially of conifers, is a barbarous practice, which destroys their beauty and sometimes seriously threatens their existence.—Ed.]

Forest Destruction.

To the Editor of Garden and Forest:

Sir.—The impassioned oration of Mr. O'Neil, which is reported in the letter from Tupper Lake Station in the New York *Tribune* of October 6th, contains some extremely careless talk. How can a man expect what he says to be taken seriously when he declares that "there is no danger that the Adirondack forest will ever be destroyed"? Anybody who has any considerable knowledge of the region knows that great areas of it have already been entirely and finally destroyed. Every traveler from this Deadwater region down through the "Schroon country" to North Creek sees all day a scene of utter desolation unrolled before and around him. Not only has the forest been destroyed. That in itself would be but a slight matter, though every tree and bush and twig had been removed. But on these hills, across leagues and leagues of country, the soil itself has been destroyed and removed, and the rocks lie bare and glistening to the sun. This soil was the accumulation of countless ages of vegetable growth, and its destruction brings back the conditions under which nature began the work of placing it here. Everybody but Mr. O'Neil is aware that this region, now so utterly ruined, was formerly covered by most valuable forests. Now it will require uncounted centuries to clothe these bare rocks with the soil required to sustain a forest again. He says that traces of abandoned farms are to be found in all parts of the region. That is very true. But he says the owners have fled. Yes, they have fled to the adjoining tracts. Each one, after he has burned out and exhausted the soil of the acres he cultivated till it will never produce trees again, has moved a little farther up or down the valley, or over to the opposite side of the stream running through it, there to repeat the same process of devastation, not of the forest only, but of the soil itself. But the ruin of the aggregate area of their "farms" is a trivial matter compared with the destruction which has been produced by the extensive forest-fires which these farmers have recklessly started in burning off the brush and timber in order to plant a crop in the ashes. These people are still "fleeing" from place to place within the Adirondack region, and burning out new farms, which will in turn soon be abandoned.

It is no wonder that people who are familiar with the country along the Chateaugay Railroad should regard with apprehension the extension of the Northern road to Tupper Lake,

and the establishment of charcoal kilns along its line. The best basis for work for improvement is usually the recognition of existing conditions and facts.

Deadwater, N. Y. *R. D. W.*

Spring or Fall Planting?

To the Editor of Garden and Forest:

Sir.—There are some things that it seems are never settled. The reason is, that their settlement depends on conditions which may vary in every individual case. One of these things that are destined to remain in dispute is the question of spring or fall planting. I have always contended, with the best authorities, I believe, that trees may be planted at any season of the year, provided it be done with proper care. The question then remains, what is "proper care"? and the kind and amount of care necessarily differs with the season and locality.

I wish to call attention to one care which may be necessary where fall-planting is practiced in northern latitudes, and which suggested itself to me when inspecting the plantations of M. Joly, near Quebec, after the meeting of the American Forestry Association at that city.

M. Joly de Lotbinière, whom all defenders of the forest know, or ought to know, as one of their stanchest and most influential friends in Canada, delights in making the Black Walnut grow far beyond the natural limits of its northern distribution. As recorded at length in the Proceedings of the Forestry Congress for 1885, after the severe winter of 1884-5, quite a large number of his trees were found dead in the spring. Examination developed the fact that the bark had been severed from the wood below the root-collar underneath the ground and for some distance along the roots near the surface of the soil; it was also observed that the trees which had succumbed stood in places where the wind had been able to sweep away the snow. The soil had evidently been severely frozen, and when thawing, in contracting away from the roots, had torn off the bark; where the frost did not penetrate the roots remained intact. M. Joly now has provided Willow hedges to collect and hold the snow, or he packs it where it seems necessary.

This suggests that where the soil has been newly dug the danger from frost is very great, since seedlings are sometimes entirely uprooted and heaved out by the frost; and that snow is a very efficient mulch where mulching is one of the cares which may be necessary for fall-planting in cold latitudes.

By the way, it seems to be time that a forestry association should avoid such planting as was performed at the end of the meeting at Quebec, where two Hickories sent from the sunny clime of Tennessee—from Andrew Jackson's own grove, it is true—were set out on the cold rock in front of the Parliament Buildings. Though the sentiment was praiseworthy, sound forestry would forbid the use of such plant material, which is bound to succumb, and the Forestry Association cannot afford to set so bad an example.

Washington, D. C. *B. E. Fernow.*

Recent Publications.

The Flora of the Kurile Islands, by K. Miyabe. Memoirs of the Boston Society of Natural History, volume iv., No. 7. Boston, 1890.

This excellent piece of work is from the pen of a former student in Harvard University and now the professor of botany in the college at Sapparo. After some general remarks on the physical geography of the Kurile Islands and a carefully worked out analysis of the composition of the flora, Mr. Miyabe gives a catalogue of the 307 species of plants which have been detected on them at different times, including those noticed by himself during a journey made to some of the southern islands in 1884. The critical notes on the characters and distribution of many of the species are specially valuable and interesting, the whole forming the only account of the flora of this group of islands, which extends for a distance of nearly 800 miles, from the Island of Jesso to the southern point of Kamschatka, and forms the boundary between the Sea of Okhotsk and the northern Pacific. Only a few of these islands are inhabited, owing to their barrenness and lack of good drinking water, and all are precipitous and inapproachable from the south side. The few bays which they do possess on the north-west and north-east sides are barely protected from the wind and do not serve as safe harbors for vessels. It is not remarkable, therefore, that so little has been known of their natural history, especially as they are encased in ice from November until April, while navigation in their neighborhood during the early summer months is made difficult and dangerous by drifting ice from the north.

Mr. Miyabe's analyses of the composition of the flora bring out the fact that 84 per cent. or 156 of the genera of plants found on these islands occur in Europe, northern Asia and North America; while of the remaining thirty-one genera only three, Skimmia, Crawfawdia and Acanthopanax, are confined to eastern and tropical Asia, while there are only four genera in the Kurile Islands which are peculiar to eastern North America and to eastern Asia—these are Leucothoe, Diervilla, Hydrangea and Astilbe. When it comes to species, thirty per cent. are distributed through Europe, northern Asia and North America, while only two rather doubtfully endemic have been noticed on the islands, whose flora is also remarkable in view of their northern position in the small proportion of circumpolar species. Fifty-five species extend into Europe, while eighty grow in North America. Of these, thirty-four are limited to north-western America, including Alaska and British Columbia; twenty-two extend southward to the Rocky Mountains and through the high mountain ranges of the Pacific states, and twenty-four are widely distributed across the continent.

Mr. Miyabe's conclusions, based on a careful investigation of this insular flora and of its relations to the floras of America and north-eastern Asia and of Japan, lead him to agree with Professor Milne in the opinion "that at the time of the last great southerly migration of the rich polar flora, Japan received her portion mostly through the Island of Saghalin, and but little, if any, through the then incompleted chain of the Kurile Islands."

The report made by the Earl of Meath on the public parks of America to the Committee of the London Council on Parks and Open Spaces has now been printed, by order of that body, in pamphlet form. It contains Lord Meath's views upon the American park system, already expressed in an article published in the *New Review* for May, and noticed at the time in this journal. The descriptive list of parks and open spaces in America, which is appended to the report, contains more complete statistical information of the area, cost, etc., of the pleasure-grounds of the United States than will be found elsewhere.

It appears from this report that of the large cities of the world of which we have park statistics, Paris is the best provided with parks with 25.55 acres for every 1,000 inhabitants, and a total park acreage of 58,000 acres. Vienna comes next with 7.25 acres for every 1,000 inhabitants and 8,000 acres of park. The park capacity of Tokio surpasses that of other European cities and of all the large American cities with 6 acres for every 1,000 inhabitants and 6,000 acres of park. London, with 22,000 acres, has but 5.76 acres for every 1,000 inhabitants, while New York, with the new system of parks included, has but 4.29 acres for every 1,000 inhabitants. Philadelphia has but 3.38 for every 1,000 inhabitants, while Chicago, which is better provided with parks than any other large American city, has 5.66 acres for every 1,000 inhabitants.

Lord Meath finds several things to admire in the American parks, and names, especially, the introduction of tropical Water Lilies into fountain basins in the parks of Chicago and New York, the lofty Palm-houses in South Park, Chicago, and in Druid Hill Park, Baltimore; the public ball-room in Jackson Park, Chicago, a permanent structure of stone and brick sufficiently large to contain 2,500 people, with a floor of polished maple for dancing and a music gallery; the lawns in Central Park in this city and in Prospect Park in Brooklyn, specially devoted to such games as tennis, croquet, base-ball and archery; the setting aside of special places for picnics, a custom which prevails in all the large parks of this country; the boats and cariages owned and controlled by the commissioners of some of the parks and leased to visitors for a fixed price; the swings which are provided in Central Park for children, with goat-carriages, swan-boats and other devices for their amusement; the music, which is provided free in almost all the principal parks of America, and especially the open-air gymnasium, one of the features of the Charles River Embankment in Boston. The lighting of small parks and other open spaces in American cities Lord Meath finds worthy of imitation in London, and it is surprising that in a city so crowded the open spaces have not already been made available for the public during the night in this way.

Notes.

At Indianapolis, Dr. Britton, of Columbia College, read a paper, prepared by request, which gave an account of the present state of systematic botany in North America.

Cyclamens are largely grown in Berlin, and at a recent flower show in that city there were forty exhibitors of this plant.

Plants one year from seed are strong, and bear from fifty to a hundred buds.

Sir Joseph Hooker's interesting and sympathetic account of the scientific career of the late John Ball prepared for the Journal of the Royal Geographical Society has now been issued separately.

In an article on irrigation in China, General Tcheng Ki Tong says in the *Revue Scientifique* that the system of water regulation in that empire is one of the greatest achievements of the intelligence and labor of man.

Very striking just now, when flowers are rare, are tall plants of Maximilian's Sunflower. In good soil these are eight or ten feet high, and where they have been properly tied up they spread out into a great dome of bright yellow blossoms which last a long time.

One hundred and sixty-five varieties of Rice, says a recent writer in the *Popular Science Monthly*, are recognized by the planters of Ceylon. The product of Chinese plantations was greatly improved by the influence of imperial edicts prohibiting the planting of any but the largest grains, while the best variety grown in our own country is due to the intelligence of a South Carolina planter who, noticing some very long grains on an ear, secured them and perpetuated their excellence.

Mr. E. W. Hammond, of Wimer, Oregon, sends the dimensions of an Elder-tree (*Sambuca glauca*) growing in Jacksonville, the county-seat of Jackson County, in that state, which are worth putting on record. This remarkable specimen, which is believed to have been planted in 1859 or 1860, now girths seven feet two inches at three feet from the ground. The trunk retains the same size up to five feet; then increases somewhat up to its division into main branches, which occurs at eight feet from the ground. The spread of the branches is thirty-three feet, and the total height of the tree about forty. The enlarged base of the trunk girths 141 inches.

Mr. Charles Mohr has published an interesting pamphlet on "The Medicinal Plants of Alabama," describing not only their distribution and their characteristics, but the proper time for collecting their useful portions. As the forests north of the Ohio have been cut away, the centre for the supply of medicinal plants has shifted to North Carolina and the northern parts of Alabama are now also being drawn upon. Most of these plants are forest-nurslings, and thus, says Dr. Mohr, "we find the interests of the healing art closely connected with the question of the preservation of the forests of our country, and the pharmacist should feel in duty bound to unite his efforts with those who are already striving to secure this important object."

A method of marketing fruit which originated in Schleswig, but which has extended to many other parts of Germany, has proved successful in securing buyers against a bad article and in giving an opportunity for good growers to make sales of a good article. Samples of various fruits are placed in dishes for exhibition in a sales-room by growers who are prepared to furnish various kinds. The buyer has only to write his name and address on a card, with the quantity he wishes, and leave it at the central office, with the number of the plate. The order is then forwarded from the office to the grower, who in turn delivers his goods there. Here the fruit is inspected, and if it comes up to the sample in quality it is forwarded to the buyer. If it proves inferior it is returned at once to the grower. A grower who, on three occasions, furnishes goods inferior to the samples is excluded from the market. The office receives 10 per cent. commission for inspecting, forwarding, etc.

The *Gardeners' Chronicle* says that a technical school has been established at Lambeth for the purpose of teaching weaving on the most scientific principles, and also for that of testing the leaves of all promising plants, "to see if any suitable substitutes for Flax and Hemp can be discovered. Previous would-be discoverers . . . have failed through want of funds, time, patience or some other necessary. At the factory we now speak of the leaves of Agaves, Aloes, *Phormium tenax*, Palms and Rhea have been tried with good, but not entirely satisfactory, results. The processes necessary for the conversion of a fibrous leaf into a textile fabric are complex and tedious: among many others may be cited those of removing the gum, combing, spinning, bleaching, dyeing and weaving, which not only have to be performed, but done as well and speedily as possible. To find any plant with fibre which will lend itself to all these processes and which will be sufficiently cheap and productive is the aim and the object of Mr. Taylor Burrows, the manager of the factory, who is prepared to test any fibrous plants submitted to him for that purpose, and to give any information concerning the botany of such specimens and the best way of raising them in quantities, should such a proceeding prove worth while."

One of the bulletins of the Ohio Experiment Station, after speaking of the difficulty which attends the testing of soils in the laboratory, says that the results of investigations on the spot are equally uncertain. "Take any single acre of ground for illustration. An open glade in the original forest may have permitted the wind to sweep away its winter coverlet of leaves, and they may have lodged in a thicket of underbrush adjoining, carrying stores of potash and phosphoric acid with them. Such a glade may have been for centuries the pasturing ground of deer. It would then accumulate nitrogen, but would lose potash and phosphoric acid through an additional channel, while the thicket would accumulate these in excess of nitrogen. The growth of a surface-rooting tree in one spot may have drawn upon the adjacent surface-soil for supplies of potash; that of a tree with a deep tap root in another may have drawn its support largely from deeper layers of the soil and also have opened a way for drainage. A slight depression of the soil here may have received added fertility in the waste from a slight elevation there, and he who has studied the soil carefully, especially where its levels are shown by the melting of snow when the ground is frozen, will have detected irregularities of level unsuspected by the casual observer."

An admirable system for labeling the trees and many of the important shrubs in the National Botanic Garden in Brussels has been adopted. Sheets of stiff metal twelve inches by eight are covered on the outer surface with white enamel, on which, at the top, are printed the Latin name of the plant, with the best known French and Flemish names below. Under the name a map of the continent to which the plant belongs is drawn in black lines, and the area of its distribution marked in red. This is practically the same system of labeling as that which has been in use for several years in the Jesup Collection of North American Woods in the Natural History Museum of this city, and which was awarded last year a medal of the Paris Exposition. The labels in the Paris Garden are attached to large trees by a small screw and are placed on a level with the eye. For plants which are not large enough to carry the label it is fixed at the top of a stout iron rod placed before them. The metal used for the label is stiff enough to prevent it from being easily bent or broken, although the authorities complain that the enamel is sometimes cracked and defaced by boys throwing stones at the labels. One of the garden staff is constantly employed in preparing these labels, which are produced at what seems the surprising low price of about one franc each.

An interesting picture, recently published in the *Revue Horticole*, shows how the Japanese, not content with dwarfing and distorting plants, sometimes cause them to simulate a totally alien manner of growth. It was drawn from a specimen exhibited at the International Exhibition last summer and represents *Aspidium lepidocaulon*, a Fern which the botanical dictionaries describe as stemless or nearly so, with fronds from one foot to a foot and a half in length, which often have a long filiform tip furnished with a terminal bud ready to take root. In the picture aforesaid there appears to grow from the soil in the pot a rough, swollen stipe as large as a cocoanut; from this spring, at diverging angles, two similar bodies, and from the top of each of these grows a luxuriant tuft of fronds. When the seemingly single plant was examined the process of its manufacture was made clear. Several plants with their roots had been taken, and the roots wrapped, up to the springing of the leaves, in compressed Moss, forming ovoid bodies, two of which seemed to grow from the one beneath them, the different plants being so placed, at various heights, as to simulate ramifications. These ovoid bodies had then been carefully wrapped in Palm fibres so delicately manipulated as to appear a natural envelope. Thus the Ferns were actually growing in the concealed Moss while seeming to be nourished from the earth in the pot through the large artificial (but natural-looking) stipes.

Catalogues Received.

P. J. Berckmans, Augusta, Ga.; Fruit and Ornamental Trees, Hardy Evergreens and Roses.—Wm. C. Cusick, Union, Ore.; Flowering Plants and Ferns.—Dammann & Co., San Giovanni a Teduccio, Italy; Vegetable, Flower and Tree Seeds, and Bulbs.—A. Dessert, Chenonceaux, Indre-et-Loire, France; Tree and Herbaceous Pæonies.—Peter Duryee & Co., 68 & 70 Vesey Street, New York; The Styron Fence.—P. H. Foster, Babylon, N. Y.; Fruit and Ornamental Trees.